

Abstract

Perovskite materials having magnetoresistive effect under the influence of an electric field can be employed in the construction of nonvolatile solid state electro-optic modulator. These materials display nonvolatile changes in electrical resistance and reactant when subjected to an electric field. As with other known perovskite materials, this is accompanied by nonvolatile changes in electro-optic properties related to dispersion and absorption of electromagnetic radiation. The nonvolatility of these materials is exploited in the construction of nonvolatile display and nonvolatile solid state electro-optic modulators such as waveguide switch or phase or amplitude modulators.